

For Reference

NOT TO BE TAKEN FROM THIS ROOM

EX LIBRIS
UNIVERSITATIS
ALBERTAENSIS



For Reference

NOT TO BE TAKEN FROM THIS ROOM

THE UNIVERSITY OF ALBERTA
PERSONALITY AND STUDY HABIT CORRELATES OF ACHIEVEMENT
AMONG LOWER SOCIOECONOMIC CLASS BOYS

by



ANNE LOUISE CHARETTE

A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
OF MASTER OF EDUCATION

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

EDMONTON, ALBERTA

DATE: JULY, 1968

THESIS
1968 (F)
32

UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES

The undersigned certified that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled Personality and Study Habit Correlates of Achievement Among Lower Socioeconomic Class Boys submitted by Anne-Louise Charette in partial fulfillment of the requirements for the degree of Master of Education.

ABSTRACT

The purpose of the study was to determine if certain personality traits and study habits and attitudes were related to achievement among junior high school boys of lower socioeconomic status.

Two groups, each comprised of 53 boys, were selected for the sample. The groups, designated as the underachieving group and the achieving group, differed markedly on academic achievement but were matched for intelligence, age, and socioeconomic status.

The California Test of Personality and a Study Habits and Attitudes Inventory designed by the author for this study were administered to the students. The data collected were used to test four specific hypotheses developed from a consideration of previously published research.

The two groups differed significantly on measures of total adjustment, social adjustment, and personal adjustment. In each case the underachieving group was significantly poorer adjusted than the achieving group. Compared with the standardized norms on the California Test of Personality, both groups showed a lower level of adjustment: the mean of the achieving group on total adjustment was

equivalent to the 30th percentile on the test norms, while the mean of the underachievers was equivalent to the 10th percentile. Scores on the personal and social adjustment sections showed similar percentile equivalents.

On all subtests the achieving groups showed better adjustment than the underachieving group. These subtests were: Self Reliance, Sense of Personal Worth, Feeling of Belonging, Freedom from Withdrawing Tendencies, Freedom from Nervous Symptoms, Social Situations, Social Skills, Freedom from Anti Social Tendencies, Family Relations, School Relations, and Community Relations.

On the Study Habits and Attitudes Inventory the achieving group showed a significantly better attitude toward education and schooling than did the underachieving group. Both groups of students showed a lack of knowledge of study skills and of how such skills can be useful.

Other subsidiary findings of differential characteristics of the two groups are reported.

ACKNOWLEDGEMENTS

The author wishes to express her sincere thanks to the members of her committee, Dr. D. C. Fair, Dr. D. R. Cameron, and Dr. D. W. R. Wilson for their assistance in the preparation of this thesis. Special thanks are due to Dr. D. C. Fair, committee chairman.

Appreciation is also expressed to the principals and staff of the schools used in this study for their cooperation and assistance and to the students, without whom this thesis would not have been possible.

Thanks are also due to my mother for her assistance in compiling data, Mr. W. Muir of the University Data Processing Centre for arranging the statistical analysis and to Miss Alice Revega for the typing.

TABLE OF CONTENTS

CHAPTER		PAGE
I	STATEMENT OF THE PROBLEM	1
	Introduction	1
	The Problem	3
	Statement of the Problem	3
	Sub Problems to be Investigated by the	
	Study	4
	Need for the Study	4
	Definitions, Assumptions, Limitations	6
	Definition of Terms	6
	Achievement	6
	Ability	7
	Underachiever	7
	Achiever	7
	Lower Socioeconomic Status	7
	Assumptions	8
	Statement of Hypotheses	9
	Limitations of the Study	10
II	REVIEW OF RELATED RESEARCH	12
	Personality Characteristics	12
	Total Adjustment	13

CHAPTER	PAGE
Personal Adjustment	15
Social Adjustment	19
Study Habits and Attitudes	23
Possible Reasons for Conflicting Results . .	27
III RESEARCH DESIGN	30
The Sample	30
Sample Selection	30
Underachieving Group	30
Achieving Group	31
Controlled Variables	32
Sex	32
Age	32
Intelligence	32
Socioeconomic Status	32
Academic Average	35
The Instruments	35
The California Test of Personality	35
Study Habits and Attitudes Inventory . . .	39
Administration and Scoring	41
Statistical Analysis	42
California Test of Personality	42
Study Habits and Attitudes Inventory . . .	43

CHAPTER	PAGE
IV ANALYSIS AND INTERPRETATION OF DATA	44
Total Adjustment	44
Results	44
Discussion	44
Personal Adjustment	48
Results	48
Discussion	52
Social Adjustment	52
Results	53
Discussion	53
Study Habits and Attitudes	54
Results	57
Discussion	60
V FINDINGS, CONCLUSIONS, IMPLICATIONS	61
Summary	61
Personality Adjustment	62
Conclusions	62
Implications	68
Study Habits and Attitudes	70
Conclusions	70
Implications	72

CHAPTER	PAGE
BIBLIOGRAPHY	74
APPENDIX A	91
APPENDIX B	96
APPENDIX C	101

LIST OF TABLES

TABLE		PAGE
I	Age of Sample by Year of Birth	33
II	Lorge-Thorndike Intelligence Test Verbal Battery I.Q. Means and Standard Deviations for the Sample	34
III	Canadian Occupational Scale Means and Standard Deviations for the Sample	36
IV	Academic Average Means and Standard Deviations for the Sample	37
V	Comparison of Total Adjustment Scores on the California Test of Personality for the Sample	45
VI	Distribution of the Total Adjustment Scores on the California Test of Personality	46
VII	Comparison of Personal Adjustment Scores on the California Test of Personality for the Sample	49
VIII	Comparison of Personal Adjustment Subtest Scores for the Sample	50
IX	Distribution of Personal Adjustment Scores on the California Test of Personality	51

TABLE

PAGE

X	Comparison of Social Adjustment Scores on the California Test of Personality for the Sample	53
XI	Comparison of Social Adjustment Subtest Scores for the Sample	55
XII	Distribution of Social Adjustment Scores on the California Test of Personality.	56
XIII	Comparison of Total Score on the Study Habits and Attitudes Inventory for the Sample . . .	58
XIV	Distribution of Scores on the Study Habits and Attitudes Inventory	59

CHAPTER I

STATEMENT OF THE PROBLEM

INTRODUCTION

A sudden surge of interest in the area of cultural deprivation has developed within the last few years. Projects such as Head Start and Higher Horizons have been planned and programmed in the United States to deal with the educational problems of lower socio-economic class children. To a lesser extent Canadian centres are becoming aware of the need for investigation of the problems associated with lower socio-economic class living-conditions and the effects of these upon educational attitudes and attainment.

The tendency of educators has been to consider children of the lower classes as a group manifesting characteristics (educational, personal, and social) which deviate negatively from the middle class norm. The self-appointed task of educators has been to overcome these "negatives". This has been the basis for the ambitious educational programs designed for the culturally deprived.

But like any other group of children, lower class children are not all alike. Given equally deprived conditions and backgrounds, some of these children perform well, both in school and in later life, and some do not. What is the reason for the difference?

The problem of differential achievement has been examined in hundreds of studies, dating as far back as the early 1900's. But these were not concerned with children of lower socio-economic status. One group of studies took heterogenous groups of subjects and after measurement of various factors reported that achievement is related to social class (Abraham, 1962; Campbell, 1965; Carey, 1962; Centi, 1965; Chapman, 1958; Coleman, 1965; Crowther, 1965; Curry, 1965; Edmiston and McBain, 1945; Engle, 1934; Fouty, 1964; Frankel, 1960; Gough, 1946; Gowan, 1955; Haller and Thomas, 1964; Havighurst, 1965; Hieronymus, 1951; Karp and Siegel, 1965; Kurtz and Swenson, 1951; McCullers and Plant, 1964; Rosen, 1965; Snellgrove, 1960; Spears and Pivnick, 1964; Volberding, 1947; Wiseman, 1964; Witham, 1962). Another group of researchers used only middle class subjects (Bishton,

1958; Nash, 1963; Ringness, 1965; Shaw and Brown, 1957; Smith, 1965) while another group used only college students and disregarded socio-economic status altogether (Ahmann, 1958; Baker and Madill, 1965; Bendig, 1958; Brown, 1954; Brown, 1953; Burgess, 1956; Corlis, 1963; Curry, 1965; Di Vesta and Woodruff, 1949; Flaherty and Reutzel, 1965; Gerberich, 1941; Holland, 1959; Jackson, 1955; Kirk, 1952; Klugh, 1955; Lum, 1960; McKenzie, 1964; McQuary, 1953; McQuary and Truax, 1955; Malloy, 1954; Merrill and Murphy, 1959; Morgan, 1952; Myers, 1952; Nash, 1963; Olson, 1965; Osborne, 1963; Owens and Johnson, 1949; Passow and Goldberg, 1958; Powell and Jourard, 1963; Ringness, 1965; Shaw and Brown, 1957; Smith, 1965; Uhlinger and Stephens, 1960; Wagman, 1964; Winter, 1960; Young, 1927). These research studies, while providing guidelines for further research, are not necessarily applicable to lower socio-economic class children.

THE PROBLEM

Statement of the Problem

The purpose of this study was to investigate the differences in the study habits and personality traits

of two groups of junior high school boys (underachievers and achievers) of lower socio-economic status to ascertain if these factors are related to academic achievement.

Sub-Problems to be Investigated by the Study

1. Is there a difference in measured social, personal, and total adjustment between lower socio-economic class adolescent boys who are achieving relatively well academically as compared to others who are achieving more poorly?

2. Is there a difference in measured study habits and attitudes between lower socio-economic class adolescent boys who are achieving relatively well academically as compared to others who are achieving more poorly?

NEED FOR THE STUDY

Hundreds of articles on cultural deprivation have appeared in both professional and popular periodicals since 1960. Some are reports of well designed studies which have investigated the causes and correlates of this problem while others make sweeping generalizations which are based upon little supporting data. In most every case, however, lower socio-economic class children are

treated as a single group, with no consideration given to individual or even sub-group differences. The majority of the studies are school based, and are directed towards the determination of methods of improving the achievement level of deprived children. Yet no research effort to date has examined correlates of differential achievement within this group.

The only study that this reviewer could find which even considered the question (in any measure) at all was centered on achievement related concepts of primary children measured by a semantic differential technique (Greenberg and others, 1965). The authors note the need for research in the area:

Lower class children as a group fall below national norms in achievement and it is widely believed that they have negative attitudes toward academic learning. However, there has been relatively little attention given to the variability within the lower class group itself. In academic achievement there is a wide range, with some children achieving success despite economic and cultural handicaps. (P. 57)

A descriptive article by Goldberg (1963), examining factors affecting educational attainment in depressed urban areas, noted the need for a different focus on the

problem than is usually found:

One source of cues to compensatory school efforts which might prove effective can be found through an understanding of the deviate in the disadvantaged groups--the "good" learner. What accounts for the boy or girl who does well in school, is interested in pursuing higher education, enjoys reading and other schoolish activities even outside of school? (P. 89)

She suggests a number of factors which may be fruitfully studied including difference in self-image difference in family or home relationships and a difference in attitude toward school itself and toward education, both by the child and by his parents.

DEFINITIONS, ASSUMPTIONS, LIMITATIONS

Definition of Terms

Achievement in this study refers to the mean teacher assigned grades for the five academic subjects (literature, language, social studies, science, mathematics) as recorded on the second term report card issued in February. For each student this mean was converted to a T-score value (standard score with a mean of 50 and a standard deviation of 10) to facilitate comparison with the ability rating.

Ability is defined in terms of the intelligence test score obtained by the student on the verbal battery of the Lorge-Thorndike Intelligence Tests. This is routinely given to elementary children in the Edmonton Public School System, so scores were readily available. For each child this I.Q. score was converted to a T-score to facilitate comparison with his achievement rating.

Underachiever, in this study, is defined as a student whose ability T-score exceeded the achievement T-score by 8 points or more. This degree of difference was arbitrarily chosen in order that a suitable number of subjects would be obtained for the sample.

Achiever is defined as a student whose achievement T-score equalled or exceeded his ability T-score, this achievement being regarded as satisfactory.

Lower Socio-economic Status In this study indication of socio-economic status is determined by classification of occupation as set out in the Blishen Scale (Appendix A). In this scale occupations were ranked on such characteristics as years of schooling required and income obtained,

then these ratings converted to T-scores for each occupation listed. In this study the occupation of the parents who was supporting the family was the basis for determining the occupational status of the family. If the family was supported by Public Welfare, a score of 30.0 was assigned. This score was arbitrarily set at two standard deviations below the mean as Blishen did not have an appropriate category. If the occupational score was below the mean (i.e. 49.9 or lower on the Blishen Scale), the family was considered to be acceptable for the sample.

Assumptions

Assumptions upon which this study is based are:

1. I.Q. scores obtained on the verbal battery of the Lorge-Thorndike Intelligence Tests are valid indicators of academic ability.
2. Students' marks on the second term report card are valid measures of academic achievement.
3. Matching the two groups of students on socio-economic status, age, intelligence, and sex will suffi-

ciently control variables so that the group are comparable.

STATEMENT OF HYPOTHESES

The hypotheses below are a restatement of the problems presented above and are based on the research studies reviewed in this paper.

1. Among junior high school boys of lower socioeconomic status, satisfactory achievers will score significantly higher on a measure of total adjustment than will underachievers.

2. Among junior high school boys of lower socioeconomic status, satisfactory achievers will score significantly higher on a measure of personal adjustment than will underachievers.

3. Among junior high school boys of lower socioeconomic status, satisfactory achievers will score significantly higher on a measure of social adjustment than will underachievers.

4. Among junior high school boys of lower socioeconomic status, satisfactory achievers will score significantly higher on a measure of study habits and attitudes than will underachievers.

LIMITATIONS OF THE STUDY

1. Some occupational titles listed for the sample were not included on the Blishen Scale, so estimates had to be made. The Blishen Scale measures occupational status but is used as an indication of socio-economic status as other measures of socio-economic status require information not available for this study. It is acknowledged that there likely exists differences in home background unaccounted for by a measure of occupational status. Also welfare supported homes are assigned a score of 30.0 although it is acknowledged that there are differences which may exist between families in this group.

2. The teacher-assigned grades are considered reasonably reliable and valid as is evidenced by their use in determining placement and promotions within the school systems, however, it is noted that there is variability in these which may be a limitation in the study.

3. The matching procedure followed may be a limitation since it was not possible to match the

satisfactorily achieving group and the underachieving group by exact intelligence quotient, date of birth, or socio-economic status as matching as done by use of frequency distributions. Therefore, a sufficiently high degree of matching may not have achieved.

CHAPTER II

REVIEW OF RELATED RESEARCH

A consideration of the research done in the area of non-intellectual correlates of academic achievement is desirable when planning another study in the area. In the literature reviewed, the only study that had been carried out with lower socio-economic class children was the study of 115 primary Negro children done by Greenberg and others (1965).

The literature reviewed below is but a fraction of that published on correlates of achievement, but it was selected because it specifically related to the areas being considered in this study. The conclusions drawn are supported by the majority of the studies reviewed.

PERSONALITY CHARACTERISTICS

The bulk of research on differential characteristics of underachievers and high achievers has been concerned with personality traits and adjustment. A wide range of instruments have been used on varying populations, so the results are not strictly comparable, although, for the purpose of this paper, they have been grouped together under broad categories.

Total Adjustment

There is some disagreement in the literature with respect to the relationship of personality adjustment and academic achievement. A number of studies investigating the overall adjustment of low and high achievers reported no real difference between the two, i.e. underachievement is not a correlate of (or symptom of) maladjustment. Borislow (1962) noted that although underachievers have poorer conceptions of themselves subsequent to inferior academic performance, that they do not have a generally poorer self-concept. Ringness (1965), although finding significant differences on scales measuring personal worth, family relations, and school relations (under-achievers are lower), found no significant difference on the means of total adjustment, personal adjustment and social adjustment, although the achievers were less variable on all measures. His conclusion, therefore, is that there are generally no gross adjustment differences between successful and unsuccessful students. Two studies using the Edwards Personal Preference Schedule failed to establish the value of this instrument in predicting

academic achievement (Demos and Spolyar, 1961; Osborne, 1963). Forden (1966) reported that personality factors as assessed by the High School Personality Questionnaire contribute very little to the prediction of academic achievement over and above intellectual factors.

Most studies, however, do find significant relationships between adjustment and academic achievement. None of these investigators deny the major influence of intelligence in predicting achievement but are cognizant that often other factors influence achievement. Cleveland (1961) using the California Test of Personality found a significant relationship between arithmetic achievement and total adjustment, personal adjustment and social adjustment, as well as various sub-factors. Capps (1962) found a significant difference in total adjustment between accelerated and retarded groups of children while Chapman's (1958) study showed achievers have a more stable personality. Gough (1946, 1952) in constructing a scale to measure nonintellective factors relating to academic achievement considered lack of maladjustment and adequate personal and social orientation to be important factors. Several other studies also report that underachievers have poorer

overall adjustment than the average student while high achievers tend to excel in overall adjustment, too.

(Ames, 1943; Flaherty and Reutzel, 1965; Haggard, 1957; Hildreth, 1938; Hinkleman, 1952; Horrall, 1957; Julitta, 1962; Pippert and Archer, 1963; Zoolian, 1965). Baker and Madill (1965) note that personality differences not apparent under benign conditions may become overt under more stressful circumstances. They note further that underachievers show maladjustment under such stress.

The major part of research evidence tends to support the following conclusions:

1. Overall personality adjustment is related to academic achievement,
2. Standardized personality questionnaires are useful in the measurement of total adjustment.

Personal Adjustment

Personal adjustment includes such areas to self-esteem, self-confidence, maturity--in total: self-concept. As in the area of total adjustment, agreement on the significance of research is not unanimous. Holland (1959) reports that underachieving students have positive self

attitudes. Owens and Johnson (1959) note that in their college sample, the typical underachiever gave better adjusted and more extroverted responses on personality inventories. Among other researchers reporting that self-attitude and self-concept are not related to academic achievement (i.e. no difference in personal adjustment exists between students of varying achievement levels) are Borislow (1962), Demos and Spolyar (1961), Forden (1966), Nemeroff (1964), Osborne (1963), Young (1927).

According to most studies, generally successful (i.e. achieving) students are well adjusted personally and show stability, maturity and adequacy of self-concept (Anfenson, 1940; Bishton, 1957; Cleveland, 1961; Corlis, 1963; Durr and Schmatz, 1964; Flaherty and Reutzel, 1965; Fink, 1963; Gill and Spilka, 1962; Gough, 1946; Gough, 1952; Gowan and Demos, 1966; Haggard, 1957; Hinkleman, 1952; Horrall, 1957; Kurta and Swenson, 1951; Morgan, 1952; Nash, 1963; Roberts, 1962; Shaw, Edson and Bell, 1960; Volberding, 1949). Personal characteristics of achieving students include self-confidence and better morale (Carter 1962) and such students tend to be realistic, optimistic, reliable, clear thinking and enthusiastic

(Shaw, Edson and Bell, 1960). Roberts (1962) found high achievers to be serious, honest, industrious, modest, obliging, sincere and steady. In addition, Morgan (1952) noted that achievement was related to objectivity, composure and self-mastery. Haggard (1957) found that high achievers showed inner harmony and a high degree of security. High achievers see themselves as freer to make choices and tend to be engaged in constructive, purposeful and resourceful activities (Durr and Schmatz, 1964). In addition, achieving students were found to be more efficient in handling personal as well as school affairs (Bishton, 1957; Burgess, 1956; Gough, 1946; Gough, 1952; Gowan, 1958; Haggard, 1957; Kurtz and Swenson, 1951).

Other studies have examined the underachieving group and have compared these students to average and/or high achieving students in order to determine differences in personal adjustment. The weight of the evidence suggests that as a group, underachievers (or low achievers) have a poor or negative self-concept and hence tend to be less well adjusted overall. (Anfenson, 1940; Burgess, 1956; Chabassol, 1959; Chapman, 1958; Combs, 1964; Corlis, 1963; Durr and Schmatz, 1964; Fink, 1963;

1957; Julitta, 1962; Kurtz and Swenson, 1951; McKenzie, 1964; Malloy, 1954; Mitchell, 1959; Pippin, 1963; Powell and Jourard, 1963; Roberts, 1962; Robinson, 1946; Smith, 1965; Spache, 1954; Van Alstyne, 1922; Walsh, 1956).

Characteristics of underachievers relating to personal adjustment which have been reported include feelings of inferiority or inadequacy (Chabassol, 1959; Combs, 1964; Durr and Schmatz, 1964; Fink, 1963; Gowan, 1955; Gowan 1958; Kurtz and Swenson, 1951; Julitta, 1962; McCandless, 1965; Malloy, 1954; Mitchell, 1959; Nash, 1963; Peppin, 1963; Witham, 1962).

More specific characteristics of poorly achieving students relating to personal adjustment include feelings of hostility (Chabassol, 1959; Corlis, 1963; Gill and Spilka, 1962; Kimball, 1952; McKenzie, 1964; Roberts, 1962; Robinson, 1946; Shaw and Brown, 1959; Spache, 1954) and immaturity (Durr and Schmatz, 1964; Gill and Spilka, 1962; Carey, 1962; Horrall, 1957; Powell and Jourard, 1963; Walsh, 1956). Other characteristics found are: dependency upon others for attitudes (Burgess, 1956; Chabassol, 1959; McKenzie, 1964; Robinson, 1946) although such dependency results in passive host-

ility (Chabassol, 1959; Corlis, 1963) and a tendency to withdraw (Chapman, 1958; Durr and Schmatz, 1964; Gowan, 1955; Gowan, 1958; Walsh, 1956). Defensiveness (Gough, 1946; Gough, 1955; Roberts, 1962; Walsh, 1956), impulsivity (McKenzie, 1964; Robinson, 1946), lack of realistic long range goals (Kurtz and Swenson, 1951; McKenzie, 1964), preoccupation with immediate gratification (Easton, 1960; Middleton and Guthrie, 1959; Smith, 1965; Wellington and Wellington, 1965) also appear to be underachiever traits.

Of the literature reviewed, the opinion of the majority of the researchers is:

1. Achieving students, as a group, are well adjusted personally and tend to have adequate self-concepts;
2. Underachieving students, as a group, are less well adjusted personally and have feelings of inadequacy;
3. Personality questionnaires are the means most often used to show differences in personal adjustment between the two groups.

Social Adjustment

Another personality area in which students of divergent achievement have been examined is that of social

adjustment. Again there is conflicting evidence. Owens and Johnson (1949) report that underachievers are better adjusted socially than overachievers while Holland (1959) reports underachievers seem to be poised and socially skillful. Several studies report that underachievers are more socially extroverted than the achieving student (Bishton, 1957; Gough, 1946; Merrill and Murphy, 1959; Middleton and Guthrie, 1959) suggest this is motivated by preoccupation with pleasure, while Durr and Schmatz (1964) note that underachievers receive little satisfaction with school oriented activity so they are more prone to try to fulfill needs for achievement and acceptance in manual and social skills as in hobbies and recreation. Another suggestion is that underachievers depend upon others for their attitudes (Burgess, 1956; Chabassol, 1959; McKenzie, 1964; Robinson, 1946) whereas achieving students are more autonomous and self-sufficient (Dishton, 1957; Gough, 1946; Hinkleman, 1952; Morgan, 1952; Nash, 1963) and also have less need for affection (Horrall, 1957; Robinson, 1946) as academic commitments allow them less time for social activities (Taylor, 1964).

On the other hand, many researchers report that students who achieve in school also achieve well socially, ie. that

superior social adjustment is a characteristic of better students academically (Anfenson, 1940; Bishton, 1957; Cleveland, 1961; Corlis, 1963; Gill and Spilka, 1962; Gough, 1946; Gough, 1952; Gowan and Demos, 1966; Haggard, 1957; Morgan, 1952; Nash, 1963). Superior social adjustment of achieving students is shown in better family relations (Durr and Schmatz, 1964; Easton, 1960; Haggard, 1957; Kurtz and Swenson, 1951; Malloy, 1954; Morrow and Wilson, 1961; Nash, 1963; Owens and Johnson, 1949; Peppin, 1963; Zoolian, 1965), a more positive attitude toward authority (Haggard, 1957; Morgan, 1952; Turney, 1930), a greater awareness of and concern for others and a greater acceptance of others (Bishton, 1957; Gill and Spilka, 1962; Gough, 1946; Gowan and Demos, 1966; Morgan, 1952; Nash, 1963; Shaw and Alvin, 1964), and better developed leadership qualities (Gowan, 1952; Kurtz and Swenson, 1951; Zoolian, 1965).

Several studies have shown that underachieving students are poorly adjusted socially (Anfenson, 1940; Chabassol, 1959; Cleveland, 1961; Combs, 1964; Corlis, 1963; Durr and Schmatz, 1964; Carey, 1962; Easton, 1960; Frankel, 1960; Gowan, 1958; Horrall, 1957; Kimball, 1952; Kurtz and Swenson, 1951; Julitta, 1962; McKenzie, 1964; Malloy,

1954; Nash, 1963; Peppin, 1963; Robinson, 1946; Shaw and Brown, 1959; Snellgrove, 1960; Van Alstyne, 1922; Walsh, 1956; Zoolian, 1965). Although Gough (1946, 1952) and Greenberg (1964) found that underachievers see others in an accepting, positive light (perhaps because of defensiveness underachievers answer questions this way on inventories) most studies find that poor achievers are overly critical of their peers (Carey, 1962; Chabassol, 1959; Combs, 1964; Shaw and Brown, 1959; Spache, 1954; Walsh, 1956), and in fact feel rejected by them (Combs, 1964; Gowan, 1955; Gowan and Demos, 1966; Kurtz and Swenson, 1951; Malloy, 1954; Peppin, 1963; Robinson, 1946; Spache, 1954; Walsh, 1956). Family relationships were also poor (Chabassol, 1959; Carey, 1962; Corlis, 1963; Gowan, 1955; Gowan, 1958; Horrall, 1957; Kimball, 1952; Kurtz and Swenson, 1951; Malloy, 1954; Morrow and Wilson, 1951; Owens and Johnson, 1949) Walsh, 1956; Witham, 1962; Van Alstyne, 1922; Zoolian, 1965), as were relationships with authority figures (Combs, 1964; Gowan and Demos, 1966; Smith, 1965; Turney, 1930).

Conclusions which can be drawn from the majority of the above studies are:

1. Achieving students are generally well adjusted socially;

2. Underachieving students tend to show social maladjustment;

3. Personality questionnaires are useful in showing differences in group and individual adjustment.

STUDY HABITS AND ATTITUDES

Often educators advance the theory that many students do not achieve well in school because they have inappropriate study skills. The relationship between academic achievement and study habits and attitudes has been investigated with somewhat contradictory results. Ahmann and Glock (1957) found the Survey of Study Habits and Attitudes to be of no value as a predictor for academic achievement either at the high school or college level. Brooks and Heston (1945) noting that, in their study, good students violated 27% of the study rules while poor students violated 31%, state that study habits are not related to grades or intelligence. To account for other conflicting research, the authors note that the validity of an instrument varies with the group tested, and that study habits change over the years.

Lum (1960) also found no difference in professed study habits between achievers and underachievers but

found attitudinal differences. She found that under-achievers had a marked tendency to procrastinate, to rely on external pressure to complete assignments, and to be more critical of educational methods and underlying philosophy than did achievers. Lum (1960) concluded that attitudes are more important than the mechanics of study.

Most researchers, however, have found a significant relationship between achievement and study habits. Significant correlations ranging from .25 to .66 with an average of .47 between study habit scores and achievement are reported by several investigators (Carter, 1962; Chapman, 1958; Cuff, 1937; Di Vesta, 1949; Eckert and Mills, 1936; Frost, 1965; Martens, 1964). These studies were conducted at various educational levels from junior high school to college.

Several authors have investigated the study habits of achievers and underachievers in greater detail. Kerns (reviewed by Frost, 1965) reported that underachievers felt that difficulties with study habits were the main obstacles in attainment of goals. Centi (1965) found that underachievers rationalize their poor work by proclaiming lack of interest and lack of effort. They

criticize teachers, courses and the policies of the school. Other investigators have also found that poor students are unwilling to conform to academic requirements and that school related attitudes are important in achievement (Brown, 1954; Demos, 1961; Di Vesta, 1949; Goldberg, 1963; Rowlands, 1961; Wellington and Wellington, 1965). Specific instances of the negative school oriented attitude as reported by underachievers include: doubt of the worth of education or the value of specific courses, inability to see the need for school rules, inability to relate to the teacher, inability to relate to other authority figures, wish to drop out of school, boredom with class activity, tendency to procrastinate, dislike of reading.

High achievers, as reported by Gerberich (1949), liked classes and instructors, used various study facilities, spent more time doing optional reading and crammed for final exams. Mackler and Giddings (1965) reported that parents of high achievers tended to be more interested in education and helped their children budget their time and obtain necessary references. Joshi and Chaudhair (1967) found that better students devoted more time to

study, used a sitting posture while reading, preferred quiet and liked to study by themselves.

A study by De Sena (1964) investigating the effectiveness of two study habits inventories (Survey of Study Habits, and College Inventory of Academic Adjustment) in predicting consistent over, under, and normal achievement, revealed that the difference between academically successful and failing students of comparable intelligence may be mainly one of certain personality characteristics such as attitude and motivation toward scholastic activities and should not be attributed to study skills alone, although there was a significant difference between the study habits of the two extreme groups. Finger and Schlessner (1965) arrive at a similar conclusion, i.e. that the significant factors in success are attitude, behavior and self-concepts as related to school. A discussion by Krumboltz (1957) emphasizes that no single instrument can measure academic motivation, but suggests that among the most efficient and effective are inventories such as the Brown-Holtzman Survey of Study Habits and Attitudes.

Although there is not universal agreement regarding the value of study questionnaires, the opinion of the majority of researchers is:

1. Underachievers have poorer study habits than high achievers;
2. Attitude toward school and studying is related to achievement;
3. Study habit questionnaires are useful in differentiating high and low achievers.

POSSIBLE REASONS FOR CONFLICTING RESULTS

Even if we adopt the "majority-rule" attitude toward the research evidence, the conflicting results are somewhat disconcerting. What are the reasons for the conflict?

Pippert and Archer (1963) report a study in which two methods of selecting underachieving students were used. Using the same intellectual predictor, underachieving groups were selected on the basis of: (a) grade point average, (b) standardized achievement test scores. Only two of the students were selected by both methods. The two groups selected differed markedly on personality characteristics.

Phillips (1943) in a cautionary note to guidance personnel, suggests that in dealing with individuals identified as 'discrepant achievers' we note the following: 1) what was the test of prediction? 2) what is the size of the correlation between the predictor and achievement? 3) does the individual have atypical experiences? 4) how does the group with which the individual is competing compare to the standardization group? 5) what is the reliability of the teachers' grades? A test gives only a limited sample of behavior. Motivation and group variability must also be considered.

Peterson (1963) in a satirical treatment of the problem, is concerned about comparability of groups rather than individuals. He notes that results between elementary school boys and female college students cannot be validly compared. The school from which the sample is drawn may have characteristics which distinguishes it from others--racially, religiously, socio-economically, etc.

Another area which should concern us is the stated measure of scholastic aptitude. Is it based upon a teacher's opinion or a standardized test? Perhaps past performance is the predictor. Peterson (1963) noted the

problem of measurement of achievement. Evidence has shown that teacher marks and standardized achievement tests apparently don't measure the same thing. The final criterion Peterson (1963) takes into consideration is the measure of discrepancy. How great must the discrepancy between ability and achievement be? It would appear that the more extreme the discrepancy, the more deviant the behavior. This may account for some of the non-significant differences.

The validity of prediction studies and of correlative studies varies with the population, with the instrument, and often with the statistics used in the research. This must be remembered in the interpretation of any reported study.

CHAPTER III

RESEARCH DESIGN

THE SAMPLE

Sample Selection

The sample investigated consisted of one hundred six students selected from five junior high schools located in the lower socio-economic areas of Edmonton. The sample was composed of two groups, designated as the Underachieving Group and the Achieving Group.

Underachieving Group The underachieving group was selected first. In order to determine those students who were not achieving academically at a level commensurate with their intellectual ability, the I.Q. scores for 586 boys registered in grades seven, eight, and nine of the five schools were converted to T-scores (standardized score with a mean of 50 and a standard deviation of 10). The academic average (on the second term report card) for each boy was also converted to a T-score to facilitate comparison. Because the means and standard deviations of the scores did not differ significantly between any two grades, the scores

for the grades were grouped together.

To determine the achievement of any individual, relative to his ability, the difference between the two T-scores was computed. If the ability T-score exceeded the achievement T-score by eight points or more, the student was considered to be an underachiever. The eight point degree of difference was selected arbitrarily in order that a suitable number of students be obtained for the sample. Of this group, a number was excluded because the occupational rating of the family was above the mean on the Blishen Scale or because the I.Q. scores were above 136 and hence the student could not be matched with an achieving student in the other group. This left a sample of 53 boys in the Underachieving Group.

Achieving Group An individual was said to be a member of the achieving group if his achievement T-score was at least as great as his ability T-score. Of this group, fifty-three were selected. In order to achieve some degree of comparability, the two groups were controlled on the following variables.

Controlled Variables

Sex Selection was restricted to boys.

Age The sample was chosen in such a way as to minimize differences in age between the two groups. Using a frequency distribution, the groups were matched on year of birth. The distribution is presented in Table I.

Intelligence The I.Q. scores on the verbal section of the Lorge Thorndike Intelligence Tests were used as the measure of intelligence. The two groups were matched with reference to intelligence by means of a frequency distribution. The I.Q. means and standard deviations are presented in Table II.

Socio-economic Status Socio-economic status was determined on the basis of the occupation of the supporting member of the family. The occupations were categorized on the basis of the Canadian Occupational Scale (Blishen, 1958) which is based on the educational requirements of occupations and the average income they provide. The norming distribution is in normalized T-

TABLE I

AGE OF SAMPLE BY YEAR OF BIRTH

	1956	1955	1954	1953	1952	1951	Mean	S.D.
Underachievers	4	17	13	16	2	1	1954.04	1.12
Achievers	4	17	13	16	2	1	1954.04	1.12

TABLE II

LORGE-THORNDIKE INTELLIGENCE TEST VERBAL BATTERY
I.Q. MEANS AND STANDARD DEVIATIONS FOR THE SAMPLE

	N	Mean	S.D.	t-value
Underachieving Group	53	118.0	9.3	0.211*
Achieving Group	53	117.6	9.8	

* A t-value of 2.000 is required for a significant difference at the .05 level.

score form. Lower socio-economic status, then, is indicated by a score on the scale which falls below the mean, i.e. 49.9 or lower. In those cases where the home is supported by Public Welfare the score assigned was 30.0. As Blishen did not include such a category on his scale, this point was set arbitrarily at two standard deviations below the mean. The two groups were matched (by means of a frequency distribution) on occupational status. Means and standard deviations are presented in Table III.

Academic Average Because of the method of selecting the two groups, the academic average of the achieving group is significantly higher than that of the under-achieving group, although there is no significant difference in intellectual ability. Table IV presents the means and standard deviations of the academic averages.

THE INSTRUMENTS

The California Test of Personality

The California Test of Personality is one of the few personality instruments applicable to a junior high

TABLE III

CANADIAN OCCUPATION SCALE MEANS AND STANDARD DEVIATION
FOR THE SAMPLE

	N	Mean	S.D.	t-value
Underachieving Group	53	42.71	5.07	0.590*
Achieving Group	53	43.32	5.33	

* A t-value of 2.000 is required for a significant difference at the .05 level.

TABLE IV

ACADEMIC AVERAGE MEANS AND STANDARD DEVIATIONS
FOR THE SAMPLE

	N	Mean	S.D.	t-value
Underachieving Group	53	45.3	8.1	17.998*
Achieving Group	53	71.8	6.9	

* A t-value of 2.39 is required for a significant difference at the .01 level.

school population. There are forms for various age/grade levels, ranging from kindergarten to adult, with modifications in both content and reading level for each form. The most appropriate form for junior high school is the Intermediate Level (grades 7 to 10) which contains 180 true-or-false questions, grouped into the following scales:

- 1A. Self Reliance
- 1B. Sense of Personal Worth
- 1C. Sense of Personal Freedom
- 1D. Feeling of Belonging
- 1E. (Freedom from) Withdrawing Tendencies
- 1F. (Freedom from) Nervous Symptoms

- 2A. Social Standards
- 2B. Social Skills
- 2C. (Freedom from) Antisocial Tendencies
- 2D. Family Relations
- 2E. School Relations
- 2F. Community Relations

The total score on scales 1A to 1F is designated as Personal Adjustment, the total score on scales 2A to 2F as Social Adjustment, and the total score on scales 1A to 2F as Total Adjustment.

The reliability and validity data given in the manual provide evidence that the test was well-developed and is a useful instrument. Reviewers of the test concluded that the faults of the California Test of Personality are the

faults of personality questionnaires in general, and that the California Test would appear to be among the better inventories available. (Sims, 1959; Shaffer, 1949; Spenser, 1949).

A number of studies using the California Test of Personality to investigate nonintellectual correlates of achievement attest to the value of the instrument in this regard (Carter, 1958; Cleveland, 1961; Durr and Schmatz, 1964; Easton, 1960; Kollmeyer, 1958; Mitchell, 1959; Ringness, 1965; Snellgrove, 1960; Volberding, 1949).

Study Habits and Attitudes Inventory

An examination of available study habit inventories revealed that these were not appropriate for junior high school students as they were normed on college students. The reading level of the tests appeared to be above the level of many of the students to be tested in this study and many of the items considered aspects that were not applicable to younger students (e.g. problems with roommates, reasons for going to college). As the commercial inventories were not appropriate, it was necessary to

construct a study habits and attitudes inventory for the project.

No question was taken directly from a published instrument, although many are similar. Questions suggested by books on study skills and by teachers working at the junior high school level were used.

In developing a scoring system for the instrument, those used by other inventories were examined. The Brown-Holtzman Inventory uses a five-point answering system. The answers ranging from "almost always" to "rarely". Other inventories use a "yes-or-no" answering system. The reviewers in Buros (1959) suggest that the five-point system is not appreciably more effective and certainly involved more work in both administration and scoring. A "true-or-false" scoring system was used for this study.

The test was administered to fifty junior high school students of lower socio-economic status in the spring of 1967 and was found to be generally effective in distinguishing underachieving from high achieving students. The original test consisted of fifty items. On an item

analysis (using significance of difference of independent proportions) sixteen of the items showed a significant difference at the .001 level, nine at the .01 level and seven at the .05 level. The majority of the remaining items, high achievers showed better study habits and attitudes but the differences were not significant. For the purpose of further studies those items which did not significantly differentiate the two groups were deleted and others were included. These new items were given to a class of lower socio-economic class adolescents and appeared to differentiate high and low achievers.

As this is not a standardized instrument, an item analysis of the test was carried out together with an examination of total score. Total score was obtained by tallying the number of questions answered in a manner which would suggest a positive attitude toward school and efficient study habits.

ADMINISTRATION AND SCORING

The previously described instruments were administered by the author in each of the five schools. Testing was done

in groups of 20 to 30 (depending upon the number of boys selected from each school) during the month of February, 1968. Instructions were the same for all groups.

Scoring was carried out by the use of a stencil for the Study Habits and Attitudes Inventory to obtain a total score. By use of the key supplied by the test authors on the California Test of Personality, twelve subtest scores were obtained on this instrument, as well as three major adjustment scores (i.e. personal adjustment, social adjustment, total adjustment).

STATISTICAL ANALYSIS

California Test of Personality

For each of the two sample groups, i.e. the achieving group and the underachieving group, the means and standard deviations (1) were calculated for the twelve subtest scores and the three general adjustment scores on the California Test of Personality. The t-test for significance of difference of means was then employed. A confidence level of .05 was accepted as significant. As the research hypotheses, based on the literature, predicted a direction, one-tailed tests were applied to the data.

(1) All statistical analysis was done by the Data Processing Centre at the University of Alberta

Study Habits and Attitudes Inventory

The t-test for significance of difference of means was employed on the total score. Since the research hypothesis predicted a direction, the one-tailed test was applied.

As the instrument was not a standardized one, an item analysis was done. As responses were either true or false, the significance of difference of independent proportions was calculated for each item, a Z-score being obtained.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

TOTAL ADJUSTMENT

The first hypothesis predicted that among junior high school boys of lower socio-economic status, achievers would score significantly higher on a measure of total adjustment than would underachievers. A t-test was employed to determine the significance of difference between the means of the total adjustment score on the California Test of Personality of the two groups.

Results

The results of the analysis are presented in Table V, and the distribution of scores in Table VI. The achieving groups showed a highly significantly better total adjustment score as measured by the California Test of Personality than did the underachieving group. The hypothesis, therefore, was supported.

Discussion

The marked difference on total adjustment suggests that underachievement and inferior overall personality

TABLE V
COMPARISON OF TOTAL ADJUSTMENT MEAN SCORES ON
THE CALIFORNIA TEST OF PERSONALITY FOR
THE SAMPLE

	N	Mean	S.D.	t-value	level of significance	Percentile on Norms
Underachieving	53	105.49	27.11	5.729	.001	10
Achieving	53	132.75	21.04			30

TABLE VI

DISTRIBUTION OF THE TOTAL ADJUSTMENT SCORES ON
THE CALIFORNIA TEST OF PERSONALITY

Score	Underachievers N=53	Achievers N=53
160-180		6
150-159	4	6
140-149	2	9
130-139	3	11
120-129	7	7
110-119	11	5
100-109	6	6
90- 99	3	2
80- 89	5	
70- 79	5	1
60- 69	5	
50- 59	2	
Mean	105.49	132.75
S.D.	27.11	21.04

adjustment are closely linked. Since the groups were matched in age, sex, intelligence and occupational status of supporting member of the family, the influence of these factors upon either achievement or adjustment should have been eliminated. There is a greater variation in the scores of the underachieving group than in the achieving group, which suggests that all underachievers are not poorly adjusted. It is interesting to note that while the mean of the standardized norms of the underachieving group fell at the 10th percentile, the mean of the achieving group was at the 30th percentile on the norms. While lower socio-economic class boys who are achieving well in school showed better total adjustment than the under-achievers, their adjustment was inferior to that of the norming population.²

(2) The Intermediate Level of the California Test of Personality was normed on 2,812 students in grades 7 to 10 inclusive in schools in Massachusetts, Pennsylvania, Washington, Wisconsin, and California, based on a sampling of cases which constituted a normal distribution of mental ability, and typical age-grade relationships: 70% were making normal progress through the grades, 20% were retarded $\frac{1}{2}$ year or more, 10% were accelerated $\frac{1}{2}$ year or more; 85% of the population was Caucasian.

PERSONAL ADJUSTMENT

The second hypothesis predicted that achievers would score significantly higher on a measure of personal adjustment than would underachievers of similar grade, age, intelligence and socio-economic status. A t-test was employed to determine the level of significance of difference between the means of the personal adjustment scores on the California Test of Personality of the two groups. T- tests were also calculated in order to determine if the degree of difference of the scores on each of the six subtests was significant.

Results

The results of the analysis are presented in Tables VII and VIII, and the distribution of scores in Table IX. The personal adjustment score was significantly better for the achieving group than for the underachievers. The hypothesis was supported.

The six subtests also differentiated the achieving group from the underachieving groups. In each case the t-value was highly significant, the achieving group showing better adjustment.

TABLE VII

COMPARISON OF PERSONAL ADJUSTMENT MEAN SCORES ON THE
CALIFORNIA TEST OF PERSONALITY FOR
THE SAMPLE

	N	Mean	S.D.	t-value	level of significance	Percentile on Norms
Underachieving Group	53	52.19	16.73	5.003	.001	10
Achieving Group	53	66.42	11.85			35

TABLE VIII

A COMPARISON OF PERSONAL ADJUSTMENT SUBTEST MEAN SCORES
FOR THE SAMPLE

Subtest	Underachievers		Achievers		t-value	Level of Significance
	Mean	S.D.	Mean	S.D.		
Self Reliance						
Raw Score	7.91	2.71	10.09	2.07	4.626	.001
Percentile*	20		50			
Sense of Personal Worth						
Raw Score	8.32	3.69	10.85	2.87	3.897	.001
Percentile*	20		40			
Sense of Personal Freedom						
Raw Score	8.75	3.28	11.45	2.73	4.555	.001
Percentile*	20		40			
Feeling of Belonging						
Raw Score	9.41	3.97	12.28	2.92	4.060	.001
Percentile*	15		30			
Freedom from Withdrawing Tendencies						
Raw Score	7.91	3.71	10.38	2.88	3.795	.001
Percentile*	20		30			
Freedom from Nervous Symptoms						
Raw Score	9.60	3.14	12.28	2.06	5.145	.001
Percentile*	30		50			

* Norm table percentile score equivalent to the mean score for the sample

TABLE IX

DISTRIBUTION OF PERSONAL ADJUSTMENT SCORES ON THE
CALIFORNIA TEST OF PERSONALITY

Score	Underachievers N=53	Achievers N=53
80-89	4	8
70-79	3	17
60-69	10	13
50-59	13	8
40-49	10	6
30-39	7	1
20-29	5	
10-19	1	
Mean	52.19	66.42
S.D.	16.73	11.85

Discussion

All areas of personal adjustment measured showed marked differences between achieving and underachieving junior high school boys of lower socio-economic status. Underachievers tend to be poorly adjusted personally.

It is interesting to note, however, that on only two scales (Self Reliance and Freedom from Nervous Symptoms) did the achieving group show an average adjustment as compared with the norm group, the scores on all other scales being lower.

SOCIAL ADJUSTMENT

The third hypothesis predicted that among junior high school boys of lower socio-economic status, achievers would score significantly higher on a measure of social adjustment than would underachievers. A t-test was employed to determine the level of significance of difference between the social adjustment scores on the California Test of Personality. The six subtest scores in the Social Adjustment Section were treated in a like manner.

Results

The results of the analysis are present in Tables X and XI. The distribution of scores is presented in Table XII. The t-value was highly significant with the achieving group showing better social adjustment. The hypothesis was supported.

In addition, on each of the subtests, the achieving group scored significantly higher than did the under-achieving group.

Discussion

The achieving group were significantly better adjusted than were the underachieving group in all areas of social adjustment measured. As a group, underachievers have more difficulty in relating to others--in the home, in the community, and at school. On none of the scales, however, was the mean for the achieving group as high as the average of the norming group.

STUDY HABITS AND ATTITUDES

Finally, it was hypothesized that among junior high school boys of lower socio-economic status, achievers

TABLE X
COMPARISON OF SOCIAL ADJUSTMENT MEAN SCORES ON THE
CALIFORNIA TEST OF PERSONALITY
FOR THE SAMPLE

	N	Mean	S.D.	t-value	level of significance	Percentile on Norms
Underachievers	53	53.30	12.28	5.760	.001	10
Achievers	53	66.40	10.87			30

TABLE XI

COMPARISON OF SOCIAL ADJUSTMENT SUBTEST MEAN SCORES
FOR THE SAMPLE

Subtest	Underachievers		Achievers		t-value	Level of Significance
	Mean	S.D.	Mean	S.D.		
Social Standards						
Raw Score	10.32	2.73	11.74	2.08	2.974	.01
Percentile*	10		30			
Social Skills						
Raw Score	9.30	2.90	10.53	2.47	2.320	.05
Percentile*	20		45			
Freedom from Antisocial Tendencies						
Raw Score	7.15	3.48	10.81	2.88	5.850	.001
Percentile*	10		40			
Family Relations						
Raw Score	9.32	3.73	12.17	2.62	4.512	.001
Percentile*	20		40			
School Relations						
Raw Score	7.53	2.12	10.38	2.39	6.438	.001
Percentile*	10		30			
Community Relations						
Raw Score	9.60	2.81	11.04	3.16	2.447	.01
Percentile*	30		40			

* Norm table percentile score equivalent to the mean score
for the sample.

TABLE XII
DISTRIBUTION OF SOCIAL ADJUSTMENT SCORES ON
THE CALIFORNIA TEST OF PERSONALITY

Score	Underachievers N=53	Achievers N=53
80-89		6
70-79	5	17
60-69	14	15
50-59	13	10
40-49	13	4
30-39	6	1
20-29	2	
Mean	53.30	66.40
S.D.	12.28	10.87

would show significantly better study habits and attitudes than would underachievers. A t-test was employed to determine the level of significance for the difference between the mean scores of the two groups on the Study Habits and Attitudes Inventory.

Results

The results of the analysis are presented in Table XIII, and the distribution of scores in Table XIV. The achievers showed significantly better scores on the instrument. The hypothesis was therefore supported.

An item analysis of the instrument was carried out because it had not been standardized. The level of significance of difference of independent proportions was used as this was a true-or-false test. The results of the item analysis are presented in Appendix C. Of the 60 questions in the inventory, 31 showed a significant difference between the two groups, the satisfactorily achieving group showing better attitudes and habits. Twenty-six of the remaining questions showed differences in the expected direction (i.e. achievers

TABLE XIII

COMPARISON OF TOTAL MEAN SCORE ON THE STUDY HABITS
AND ATTITUDES INVENTORY FOR THE SAMPLE

	N	Mean	S.D.	t-value	level of significance
Underachievers	53	26.45	6.98	7.235	.001
Achievers	53	38.28	9.50		

TABLE XIV

DISTRIBUTION OF SCORES ON THE STUDY
HABITS AND ATTITUDES INVENTORY

Score	Underachievers N=53	Achievers N=53
50-54		2
45-49		5
40-44	2	17
35-39	5	11
30-34	8	9
25-29	16	5
20-24	13	3
15-19	6	1
10-14	3	
Mean	26.45	38.28
S.D.	6.98	9.50

displaying better habits and attitudes) but these were not significant.

Discussion

The fact that achieving students did significantly better on this instrument is not surprising. The commercially available study habits inventories have been validated against academic achievement this has thrown some light on their usefulness in the school. Unlike the distribution scores on the personality measures, where underachievers showed greater variability, it transpired that the achievers showed wider variability on the Study Habits and Attitudes Inventory. Because of the large number of questions which did not show significant differences, the instrument will have to be revised to be of greater use.

CHAPTER V

FINDINGS, CONCLUSIONS, IMPLICATIONS

SUMMARY

This study was designed to determine if certain personality traits and study habits and attitudes were related to achievement among junior high school boys of lower socio-economic status. Two groups of boys were selected from five Edmonton schools. The groups were matched for intelligence, age, and socio-economic status (which was determined by the Blishen Scale). The one noticeable factor in which the groups differed markedly was academic achievement. One group of 53 boys were definite underachievers, the other group, also comprised of 53 boys were achieving at a level equal to or greater than their ability rating as measured by the Lorge-Thorndike Intelligence Tests Verbal Battery. It was predicted that the achieving group would show better scores on measures of total, personal and social adjustment and on an inventory of study habits and attitudes.

The California Test of Personality (Intermediate Level) and a Study Habits and Attitudes Inventory

(constructed by the investigator) were administered to the boys. The satisfactorily achieving group of boys obtained significantly higher scores on all the measures. In addition, all subtest scores on the California Test of Personality showed that the satisfactorily achieving group was significantly better adjusted. The subtests were: Self Reliance, Sense of Personal Worth, Sense of Personal Freedom, Feeling of Belonging, (Freedom from) Withdrawing Tendencies, (Freedom from) Nervous Symptoms, Social Situations, Social Skills, (Freedom from) Anti-social Tendencies, Family Relations, School Relations, Community Relations.

PERSONALITY ADJUSTMENT

Conclusions

For the sample used in this study, satisfactorily achieving boys show significantly better adjustment in all areas than do underachieving boys. It is particularly noteworthy that the difference was greatest on the School Relations subtest. This may lead one to believe that underachievement is a school-based phenomenon which does

not affect other areas of social contact, as has been suggested by Borislow (1962). The results of this study, however, suggest that underachievement is a more global problem. The underachievers scored below the satisfactory achievers in all areas of adjustment measured on the California Test of Personality and it was found that the average of the underachievers' scores ranged from the 10th to the 30th percentile on the norms given by the test authors.

The next greatest difference noted was that for the subtest which measured freedom from anti-social tendencies. As the situations given in the test were not school-focused, carry-over from disappointment in the school setting is unlikely. However, influence in the opposite direction might be possible. When a child experiences hostility toward others and acts upon this, it might well influence his acceptance and success in a social institution such as a school adversely.

The unanswered question would have to be: "Why the hostility?" A clue may lie in the results of the

subtests in the personal adjustment section, where the underachievers obtained significantly poorer level of adjustment (.001) than did the satisfactory achievers. These subtests included such characteristics as self-reliance, sense of personal worth, sense of personal freedom, feeling of belonging, freedom from withdrawing tendencies, freedom from nervous symptoms. Again, the questions which led to these scores were not school-focused. This would suggest that underachieving boys have feelings of worthlessness, helplessness, and isolation which pervade all their activities. These feelings likely cause what, in the child, might be considered as adaptive behavior. This may be expressed in the form of withdrawal, or by the occurrence of various minor complaints caused by nervousness, such as headaches, sleepiness, etc. A need to react against these feelings of unworthiness and nonbelonging might also develop--the familiar reaction of hostility, of aggression. In the lower class culture, aggression is often an accepted way of dealing with problems, (Hollingshead and Redlich, 1958; Hunnicutt, 1964; Kessler, 1965; Ornstein, 1966;

Passow, 1963; Reissman, 1962) particularly the ones which require boys to make a showing of themselves in some area. Those who are achieving in other areas do not find it as necessary to "prove themselves" in this way. (Bishton, 1957; Gough, 1946; Hinkleman, 1952; Morgan, 1952; Nash, 1963).

This suggestions is further substantiated by noting the results obtained from the Social Adjustment subtests. In spite of the very great difference in measures of anti-social tendencies, school relations, and family relations between the two groups, there is relatively little difference on two subtests: social skills and community relations. An underachiever receives little satisfaction from school oriented activities, but may be able to prove himself to his peer group through defiance towards authority figures (in the home, school or society). If this gains acceptance with a certain element of his peer group, the underachiever might attain a better relationship with them (hence the better scores on social skills and community relations, again with peers) than would be indicated by his general maladjust-

ment. Some authors feel that underachievers are well-adjusted socially, (Owens and Johnson, 1949; Holland, 1959; Morrill and Murphy, 1959). However, in this study this has not proven to be the case and it is the satisfactory achievers who show greater self-reliance and inner direction. This is supported by the findings of Durr and Schmatz (1964), Bishton (1957), Gough (1946), Hinkleman (1952, Morgan (1952), and Nash (1963).

Not all underachievers are severely disturbed, either personally or socially and there is great variability among the scores on all personality measurements, particularly for the underachiever.

One interesting finding is that the achieving group generally shows poor adjustment when compared to the norming group on the test. Many authors, writing in the area of cultural deprivation, suggest that lower class children tend to be poorly adjusted as a group (at least on personality tests normed on middle class children). The most apparent characteristic of lower class children found by researchers is lack of self-esteem (Beiser, 1965; Brazziel, 1965; Daniel, 1964;

Gordon, 1965; Hunt, 1966; Miller, 1966; Ornstein, 1966), which may be due to internalization of middle class attitudes toward them. It is to be noted here that the school is a middle class institution staffed by middle class personnel with middle class values. (Kvaraceus, 1966; Landers, 1964).

Other characteristics which investigators have found are lack of internal control (i.e. underachievers see themselves as victims of external forces); lack of security and stability (Beiser, 1965; Brazziel, 1965); a tendency to be mistrusting, particularly of authority figures (Beiser, 1965; Brazziel, 1965; Ornstein, 1966), and anti-intellectualism (Miller, 1966).

The only subtests in which the satisfactorily achieving group average was comparable to that of the norming group were Self Reliance and (Freedom from) Nervous Symptoms. This would lead one to hypothesize that these boys achieve because they have a fair degree of self-reliance and can succeed in spite of adverse conditions. Perhaps the reason nervous symptoms are not evident is that these boys are achieving, and success

in some areas alleviates a stressful situation and the accompanying nervous symptoms.

Implications

Since both groups of lower socio-economic class children showed relatively poor adjustment, both personally and socially, it is imperative that counselling services be provided for these children. Although the sample tested were all junior high school boys, there is no reason to believe that girls would not need similar services, or that younger children in the elementary schools might not benefit. The value of counselling in the elementary school is that it may be preventative rather than remedial, hence more economical.

David Reissman (1962) and others have suggested that the schools need to change both their focus and methods when dealing with lower class children, for the middle class value system is not applicable in its entirety to this group of children. Administrators should at least consider such minimal changes as greater flexibility in programming where possible and a wider

variety of nonacademic material should appear, even at the junior high school level. It is to be noted that the high schools are offering increasingly diversified programs, particularly for lower ability students.

As Passow and Goldberg (1958) suggest underachievement should be regarded as a symptom of deeper underlying personality conflict and dealt with accordingly.

Academic underachievement appears to be a symptom of more basic personal and social problems. The depth, seriousness and durations of the underlying problem determine the extent and kind of help a student needs. (P. 125)

As much of the problem seems to centre in feelings of unworthiness and lack of self-reliance, ways must be found to foster self-confidence and self-competence in socially acceptable areas so that it is not necessary to have release sought through hostility. Organizations such as the Edmonton Boys' Club are helpful in this regard, as they provide recreational facilities, academic help and informal counselling services.

STUDY HABITS AND ATTITUDES

Conclusions

As anticipated, underachievers showed poorer study habits and attitudes toward school and study than did the achievers. An informal inspection of the items of the study habits inventory designed by the author, showed that three major themes ran through the papers of the under-achievers: antagonism toward teachers, inability to see the importance of school, and apathy toward education.

The inventory results suggest that underachievers do not like most of their teachers, often because they feel that teachers favor their "pets," hold grudges against other students, and generally do not understand teenagers. The typical underachiever finds school work uninteresting, incomprehensible, a waste of time, and hateful. When he misses school, which he does frequently, he will probably not make up the work missed unless forced to do so; he will not work hard in a subject he dislikes; he does not check over the answers to a test paper before he hands it in; and neither his assignments nor his note-book are neat and complete. He feels that having fun is more important

than doing well in school, he feels limited by the school's rules and regulations, and is likely to cheat if he feels he won't be found out. These findings corroborate those of Brown (1954), Centi (1965), Demos (1961), Di Vesta (1949), Goldberg (1963), Rowlands (1961) and Wellington and Wellington (1965).

Underachievers do not have significantly poorer facilities than do achievers: there is no significant difference in such things as library membership, the presence of an encyclopedia in the home or freedom from distracting influences, etc. It should be noted that more underachievers have a suitable, quiet place to study than do achievers but they tend to counteract the effects of this by turning on the radio or T.V., lying on the bed to study, and eating while doing their homework. They tend to rationalize their poor study habits by mentioning poor health (classes are missed because of illness and they are too sleepy to study efficiently).

Many of the questions used did not delineate the expected difference between the two groups of students. Both groups preferred multiple choice examinations to those involving essays and both were nervous and easily distracted

before an examination. Both groups like class discussions and dislike studying, and neither group do much reading.

Some interesting points arose from the item analysis: first a general lack of good study habits was revealed. Only 13 of 53 achievers use a study schedule, less than half of the achievers keep notebooks neat and complete, less than half of this group use an outline when writing an essay or make notes or underline when studying for an exam. More than half of the satisfactory achievers get into trouble for "fooling around" in class, and feel that some subjects are a complete waste of time. In spite of lower socio-economic status, 73 of the 106 students had an encyclopedia set at home, although only 67 belonged to the public library. Only 15 of the students tested would like to be a teacher--further indication of the low esteem in which these children hold educators.

Implications

Both groups of students show a lack of knowledge about proper study skills and of how such skills can be useful. Formal instruction in study habits and procedures should be an integral part of the school curriculum, particularly

for children such as those questioned in the course of this study, a group which is unlikely to get instruction on such matters outside of school. While it is not suggested that academic work be made into play, at the same time it could be presented in a meaningful fashion so that the students are able to see the purpose behind studying a particular subject as well as its potential worth to him. An honest appraisal of the various subjects should be carried out, both in terms of cultural and practical value to students. Because these children find school boring, more in the way of audiovisual aids, and novel approaches such as those suggested by Hilda Taba and Deborah Elkins in their book Teaching Strategies for the Culturally Disadvantaged, should be used.

BIBLIOGRAPHY

- Abraham, V. Motivating the underachiever, Education, 1962, 82:468-71.
- Ahmann, J.S. and Glock, M.D. The utility of Study Habits and Attitudes Inventory in a college reading program, Journal of Educational Research, 1957, 51:297-303.
- Ames, V. Factors related to high school achievement, Journal of Educational Psychology, 1943, 34:329-36.
- Anfenson, R.D. School progress and pupil adjustment, Elementary School Journal, 1940, 41:507-14.
- Anonymous. Superior underachiever, School and Society, 1962, 90:134.
- Baker, R.W. and Madill, T.O. Continued investigation of susceptibility to distraction in academically under-achieving and achieving male college students, Journal of Educational Psychology, 1965, 56:254-258.
- Bendig, A.W. Comparison of the validity of two temperament scales in predicting college achievement, Journal of Educational Research, 1957, 51:605-609.
- Bhatnagar, R.P. Academic achievement as a function of one's self concepts and ego function, Psychological Abstracts, 1967:6232.
- Bhatnagar, R.P. Research on personality correlates of academic achievement, Psychological Abstracts, 1966:13467.
- Bishton, R. A study of some factors related to achievement of intellectually superior eighth grade children, Journal of Educational Research, 1957, 51:203-207.
- Blishen, B.R. The construction and use of an occupational class scale. In B.R. Blishen, T.E. Jones, K.D. Naegele, J. Porter (Ed.) Canadian Society: Sociological Perspectives, The Free Press of Glencoe, Inc., New York, 1961. Pp. 477-485.

- Bloom, B.S. and others. Compensatory Education for Cultural Deprivation, Holt, Rinehart and Winston, Inc., New York, 1965.
- Borislow, B. Self evaluation and academic achievement, Journal of Counseling Psychology, 1962, 9:245-254.
- Brazziel, W. Correlates of southern Negro personality, Journal of Social Issues, 1965, 21:46-53.
- Brooks, F.D. and Heston, J.C. The validity of items in a study habits inventory, Journal of Educational Psychology 1945, 36:257-70.
- Brown, W.F. and others. Motivational differences between high and low scholarship students, Journal of Educational Psychology 1954, 45:215-33.
- Brown, W.F. and Holtzman, W.H. Brown Holtzman Survey of Study Habits and Attitudes, The Psychological Corporation, New York, 1960.
- Brown, W.H. The problems of probation and honors students, Educational Research Bulletin, 1953, 32:14-16.
- Burgess, E. Personality factors of over- and under-achievers, Journal of Educational Psychology, 1956, 47:88-99.
- Campbell, J.W. Factors related to scholastic achievement, Dissertation Abstracts, 1966, 26:4360-61.
- Capps, R.R. Comparison of superior achievers and under-achievers in arithmetic, Elementary School Journal, 1962, 63:141-5.
- Carter, C.L. The relationship between personality and academic achievement (reading and arithmetic) of seven year olds, Dissertation Abstracts, 1958, 19:1027.
- Carter, H.D. Over achievers and underachievers in the junior high school, Psychological Abstracts, 1962:1KL51C.

- Carey, H.B. Causes of underachievement, in H.A. Robinson (Ed.), The Underachiever in Reading, University of Chicago Press, Chicago, 1962. Pp 70-78.
- Centi, P.J. Motivation of underachievers, Catholic Education Review, 1965, 63:95-100.
- Chabassol, D.J. Correlates of Academic Underachievement in Male Adolescents, unpublished Ph. D. Thesis, University of Alberta, 1959.
- Chabassol, D.J. Theory of underachievement, Canadian Educational Research Digest, 1962, 3:216-20.
- Chapman, R.S. A Study of Achievement and Underachievement in English Language Ten in Alberta Composite High School, unpublished M.Ed. Thesis, University of Alberta, 1958.
- Cleveland, G.A. A study of certain psychological and sociological characteristics related to arithmetic achievement, Dissertation Abstracts, 1961, 22:2681-82.
- Coleman, J.S. The adolescent subculture and academic achievement, in A. Kerber and B. Bommarito (Ed.) The Schools and the Urban Crisis, Holt, Rinehart and Winston, New York, 1965. Pp. 109-120.
- Combs, C.F. Perception of self and scholastic underachievement in the academically capable, Personnel and Guidance Journal, 1964, 43:47-51.
- Corlis, R.B. Personality factors related to underachievement in college freshmen of high intellectual ability, Dissertation Abstracts, 1963, 24:832.
- Crowther, B. A sociological analysis of academic achievement correlates, Dissertation Abstracts, 1966, 26:5577.
- Curry, R.L. The effect of socioeconomic status on the scholastic achievement of sixth grade children, in B.S. Bloom and others (Ed.), Compensatory Education for Culturally Disadvantaged, Holt, Rinehart and Winston, Inc., New York, 1965.

- Daniel, W.G. Problems of disadvantaged youth, rural and urban, Journal of Negro Education, 1964, 33:218-224.
- Demos, G.D. and Spolyar, L.J. Academic achievement of college freshmen in relation to the Edwards Personal Preference Schedule, Educational and Psychological Monographs, 1961, 21:473-9.
- De Sena, P. Effectiveness of two study habit inventories in predicting consistent over, under, and normal achievement in college, Journal of Counseling Psychology, 1964, 11:388-94.
- Di Vesta, F.J. and others. Motivation as a predictor of college success, Educational and Psychological Monographs, 1949, 9:339-48.
- Duff, O.L. and Siegel, L. Biographical factors associated with academic over- and underachievement, Journal of Educational Psychology, 1950, 41:43-46.
- Durr, W.K. and Schmatz, R.R. Personality differences between high achieving and low achieving gifted children, Reading Teacher, 1964, 17:251-54.
- Easton, J. Some personality traits of underachieving and achieving high school students of superior ability, Psychological Abstracts, 1960, 34:7786.
- Eckert, R. and Mills, H.C. Variations among high school seniors in promise and performance measures, School Review, 1936, 44:274-82.
- Edmiston, R.W. and McBain, L. Social and economic background effects on school achievement, School and Society, 1945, 61:190-95.
- Engle, T.L. Home environment and school records, School Review, 1934, 42:590-98.
- Finger, J.A. and Schlessner, G.E. Non intellectual predictors of academic success in school and college, School Review, 1965, 73:14-29.

- Fink, M.B. Self concept as it relates to academic underachievement, Psychological Abstracts, 1963:2008.
- Flaherty, M.E. and Reutzell, E. Personality traits of high and low achievers in college, Journal of Educational Research, 1965, 58:409-11.
- Forden, H.G. A study of the use of the High School Personality Questionnaire as a predictors of grade nine academic success in the four year and five year sources at Kitchener-Waterloo Collegiate and Vocational School, Ontario Journal of Educational Research, 1966, 8:195-206.
- Frankel, E. Comparative study of achieving and underachieving high school boys of high intellectual ability, Journal of Educational Research, 1960, 53:172-80.
- Frost, B.P. Some conditions of scholastic achievement: interests and attitudes, Canadian Educational Research Digest, 1965, 5:275-7.
- Frost, B.P. Some conditions of scholastic achievement: part II, Canadian Educational Research Digest, 1966, 6:6-17.
- Fouty, A.T. A study of the effects of mobility and related factors on the academic achievement of children in a suburban school, Dissertation Abstracts, 1964, 25:3351.
- Gallagher, J.J. and Rogge, W. Gifted: underachievement, Review of Educational Research, 1966, 36:48.
- Gerberich, J.R. Factors related to the college achievement of high aptitude students who fail of expectation and of low aptitude students who exceed expectation, Journal of Educational Psychology, 1941, 32:253-63.
- Gill, L.J. and Spilka, B. Some Non-intellectual correlates of academic achievement among Mexican-American secondary students, Journal of Educational Psychology, 1962, 53:144-9.

- Goldberg, M.L. Factors affecting educational attainment in depressed urban areas, in A.H. Passow (Ed.) Education in Depressed Areas, Columbia University Press, New York, 1963.
- Goldberg, M.L. and others. A three year experimental program at De Witt Clinton High School to help bright under-achievers, High Points, 1949, 41 (no. 1) 5-35.
- Gordon, E.W. Characteristics of socially disadvantaged children, Review of Educational Research, 1965, 35:377-86.
- Gough, H.G. Factors relating to the academic achievement of high school students, Journal of Educational Research, 1946, 40:66-78.
- Gough, H.G. The relationship of socioeconomic status to personality inventory and achievement test scores, Journal of Educational Psychology, 1946, 37:527-40.
- Gough, H.G. What determines the academic achievement of high school students, Journal of Educational Research, 1952, 46:321-31.
- Gowan, J.C. Dynamics of underachievement of gifted children, Exceptional Children, 1958, 24:98-101.
- Gowan, J.C. The underachieving gifted child: a problem for everyone. Exceptional Children, 1955, 21:247-49.
- Gowan, J.C. and Demos, G.D. (Ed.) The Disadvantaged and Potential Dropout, Charles C. Thomas, publisher, Springfield, 1966.
- Greenberg, J.W. and others. Attitudes of children from a deprived environment toward achievement related concepts, Journal of Educational Research, 1965, 59:57-62.
- Haggard, E. Socialization, personality and academic achievement in gifted children, School Review, 1957, 65:388-414.

- Haller, A.O. and Thomas, S. Personality correlates of the socioeconomic status of adolescent males, Psychological Abstracts, 1964, 38:4094.
- Havighurst, R.J. Conditions favorable and detrimental to the development of talent. School Review, 1957, 65:20-26.
- Hieronimus, A.N. A study of social class motivation: relationships between anxiety for education and certain socioeconomic and intellectual variables, Journal of Educational Psychology, 1951, 42:193-205.
- Hildreth, G. The educational achievement of gifted children, Child Development, 1938, 9:365-71.
- Hinkleman, E.A. Relation of certain personality variables to high school achievement, School Review, 1952, 60:532-34.
- Hirsch, J.G. Individual characteristics and academic achievement in J.M. Beck and R.W. Saxe, (Ed.) Teaching the Culturally Disadvantaged Pupil, Charles C. Thomas, publisher, Springfield, 1965.
- Holland, J.L. The prediction of college grades from the California Psychological Inventory and the Scholastic Aptitude Test, Journal of Educational Psychology, 1959, 50:135-42.
- Hollingshead, A. and Redlich, F.C. Social Class and Mental Illness, John Wiley and Sons, New York, 1958.
- Horral, B.M. Academic performance and personality adjustment of highly intelligence college students, Genetic Psychology Monographs, 1957, 55:3-83.
- Houtras, P.T. The relationship between student load and achievement, Journal of Educational Research, 1958, 51:355-60.

- Hoyt, D.P. and Norman, W.M. Adjustment and academic predictability, Journal of Counseling Psychology, 1954, 1:96-99.
- Hunnicutt, C.M. Urban Education and Cultural Deprivation, Syracuse University Press, New York, 1964.
- Jackson, R.A. Prediction of the academic success of college freshmen, Journal of Educational Psychology, 1955, 46:296-301.
- Joshi, J.M. and Chaudhari, S. Study habits of industrious students, Psychological Abstracts, 1967:7783.
- Julitta, Sister Mary. Techniques for identifying the under-achiever in kindergarten through grade three, in H.A. Robinson (Ed.), The Underachiever in Reading, University of Chicago Press, Chicago, 1962.
- Karp, J.M. and Sigel, I. Psychological appraisal of disadvantaged children, Review of Educational Research, 1965, 35:401-412.
- Keep, N. and Whiteside, G.H. The relation of nervous and emotional stability to educational achievement, Journal of Educational Psychology, 1930, 21:429-41.
- Kessler, J.W. Enviornmental components of measured intelligence, School Review, 1965, 73:339-358.
- Kimball, B. The sentence completion technique in a study of scholastic underachievement, Journal of Consulting Psychology, 1952, 16:353-8.
- Kirk, B.A. Test versus academic performance in malfunctioning students, Journal of Consulting Psychology, 1952, 16:213-16.
- Klugh, H.E. and Bendig, A.W. The Manifest Anxiety and A.C.E. scales and college achievement, Journal of Consulting Psychology, 1955, 19:487.
- Kollmeyer, L.A. The relationship between children's drawings and reading achievement, personal-social adjustment and intelligence, Dissertation Abstracts, 1958, 19:2269.

- Krumboltz, J.D. Measuring achievement motivation--a review, Journal of Consulting Psychology, 1957, 4:191-198.
- Kurtz, J.J. and Swenson, E.J. Factors related to overachievement and underachievement, School Review, 1951, 59: 472-80.
- Kvaraceus, W.C. Programs for the disadvantaged: promise or pretense. National Elementary Principal, February, 1966, 59-65.
- Landers, J. The responsibility of teachers and school administrators, Journal of Negro Education, 1964, 33:318-32.
- Lourenso, S.V. and others. Personality characteristics revealed in drawings of deprived children who differ in school achievement, Journal of Educational Research, 1965, 59:63-7.
- Lum, M.K.M. Comparison of under and overachieving female college students, Journal of Educational Psychology, 1960, 51:109-14.
- McCandless, B. Environment and Intelligence, in B.S. Bloom and others (Ed.) Compensatory Education for Culturally Disadvantaged, Holt, Rinehart and Winston, Inc., 1965.
- McCullers, J.C. and Plant, W.T. Personality and social development cultural influences: the culturally deprived child, Review of Educational Research, 1964, 34:599-604.
- McKenzie, J.D. The dynamics of deviant achievement, Personnel and Guidance Journal, 1964, 42:683-86.
- McQuary, J.P. Some relationships between nonintellectual characteristics and academic achievement, Journal of Educational Psychology, 1953, 44:215-28.
- McQuary, J.P. and Truax, W.B. An underachievement scale, Journal of Educational Research, 1955, 48:393-99.

- Mackler, B. and Giddings, M.G. Cultural deprivation: a study in mythology, Teachers College Record, 1965, 66:608-13.
- Malik, M.A. School Performance of Children in Families Receiving Public Assistance in Canada, The Canadian Welfare Council, Ottawa, 1966.
- Malloy, J. An investigation of scholastic over and under-achievement among female college freshmen, Journal of Counseling Psychology, 1954, 1:260-6.
- Martens, B. The relationship of intelligence, attitudes and study habits to academic achievement, Canadian Educational Research Digest, 1964, 4:268-72.
- Merrill, R.M. and Murphy, D.T. Personality factors and academic achievement in college, Journal of Counseling Psychology, 1959, 6:202-11.
- Middleton, G. and Guthrie, G.M. Personality syndromes and academic achievement in college, Journal of Educational Psychology, 1959, 50:66-9.
- Miller, C.H. Counselors and the culturally different, Teachers College Record, March 1966, 212.
- Mitchell, J.V. Goal setting behavior as a function of self acceptance, over and underachievement and related personality variables, Journal of Educational Psychology, 1959, 50:93-104.
- Mitchell, J.V. The identification of items in the California test of Personality the differentiate between subjects of high and low socioeconomic status in the fifth and seventh grade levels, Journal of Educational Research, 1957, 51:241-50.
- Morgan, H.M. A psychometric comparison of achieving and nonachieving college students of high ability, Journal of Consulting Psychology, 1952, 16:292-98.

- Morrow, W.R. and Wilson, R.C. Family relations of bright high achieving and underachieving high school boys, Child Development, 1961, 32:501-10.
- Myers, R.C. Biographical factors and academic achievement, Educational and Psychological Measurement, 1952, 12:415-26
- Nash, R.J. A study of particular self perceptions as related to scholastic achievement of junior high school age pupils in a middle class community, Dissertation Abstracts, 1963, 24:3837.
- Nemeroff, D. The relationship between self attitudes, academic achievement, socioeconomic status and intelligence in eight grade public school children, Dissertation Abstracts, 1964, 25:6396-97.
- Olson, L.A. Academic attitudes, expectations and achievement, Improving College University Teacher, 1965, 193:39-41.
- Ornstein, A.C. Who are the disadvantaged, Journal of Secondary Education, 1966, 41:154-63.
- Osborn, W.J. Emotional blocks in reading, Elementary School Journal, 1952, 52:23-30.
- Osborne, D. The relationship of personality factors to academic achievement in college, Dissertation Abstracts, 1963, 24:3839.
- Owens, W. and Johnson, W. Some measured personality traits of collegiate underachievers, Journal of Educational Psychology, 1949, 40:41-6.
- Passow, A.H. and Goldberg, M.L. Study of underachieving gifted, Educational Leadership, 1958, 16:121-25.
- Peppin, B.H. Parental understanding, parental acceptance and the self concept of children as a function of academic over and underachievement, Dissertation Abstracts, 1963, 23:4422-23.

- Peterson, J. Researcher and the underachiever: never twain shall meet, Phi Delta Kappan, 1963, 44:379-81.
- Peterson, S. How Well are Indian Children Educated? United States Indian Service, Haskell Institute Print Shop, Lawrence, Kansas, 1948.
- Phillips, E.L. A note on the use of the term overachievement in guidance and personnel work, Journal of Educational Psychology, 1943, 34:300-6.
- Pippert, R. and Archer, N.S. Comparison of two methods for classifying underachievers with respect to selected criteria, Personnel and Guidance Journal, 1963, 41:788-91.
- Powell, W.J. and Jourard, S.M. Some objective evidence of immaturity in underachieving college students, Journal of Counseling Psychology, 1963, 16:276-82.
- Ringness, T.A. Affective differences between successful and unsuccessful bright ninth grade boys, Personnel and Guidance Journal, 1965, 43:500-6.
- Ringness, T.A. Emotional adjustment of academically successful and unsuccessful bright ninth grade boys, Journal of Educational Research, 1965, 59:88-91.
- Roberts, H. Factors affecting the academic underachievement of bright high school students, Journal of Educational Research, 1962, 56:176-83.
- Robinson, H.M. Why Pupils Fail in Reading, University of Chicago Press, Chicago, 1946.
- Rosen, B.C. The achievement syndrom: a psycho-cultural dimension of social stratification in B.S. Bloom and others, (Ed.) Compensatory Education for the Culturally Disadvantaged, Holt, Rinehart and Winston, Inc., New York, 1965.
- Roth, R.M. and Meyersburg, H.A., The nonachievement syndrome, Personnel and Guidance Journal, 1963, 41:535-40.

- Schaffer, L.F. Review of California Test of Personality, in O.K. Buros, Third Mental Measurements Yearbook, Rutgers University Press, New Brunswick, 1949, Pp. 55-6.
- Shaw, M.C. and Alvin, G.J. Self concept of bright academic underachievers, Personnel and Guidance Journal, 1964, 42:401-3.
- Shaw, M.C. and Brown, D.J. Scholastic underachievement of bright college students, Personnel and Guidance Journal, 1957, 38:195-9.
- Shaw, M.C., Edson, E., and Bell, H.M. The self concept of bright underachieving high school students as revealed by an adjective check list, Personnel and Guidance Journal, 1960, 39:193-6.
- Sims, V.M. Review of the C.T.P. in O.K. Buros (Ed.) Fifth Mental Measurements Yearbook, Gryphon Press, New York, 1959. Pp 100-103.
- Smith, L. Significant differences between high ability achieving and nonachieving college freshmen as revealed by college data, Journal of Educational Research, 1965, 59:10-12.
- Smith, M.C. Motivating the underachieving gifted pupil in junior high school, Journal of Secondary Education, 1961, 36:79-82.
- Snellgrove, J.L. A study of relationships between certain personal and socioeconomic factors and underachievement, Dissertation Abstracts, 1965, 40:242-6.
- Snyder, E.E. Self-concept theory: an approach to understanding the behavior of disadvantaged pupils, Clearing House, 1965, 40:242-6.
- Spache, G.D. Personality characteristics of retarded readers as measured by the picture frustration study, Educational and Psychological Monographs, 14(No. 1) 196-92.

- Spears, H. and Pivnick, I. How an urban school system identifies its disadvantaged, Journal of Negro Education, 1964, 33:245-53.
- Stagner, R. Relation of personality to academic aptitude and achievement, Journal of Educational Research, 1932, 26:648-60.
- Spenser, D. Review of the C.T.P. in O.K. Buros, (Ed.), Third Mental Measurements Yearbook, Rutgers University Press, New Brunswick, 1949.
- Taba, H. and Elkins, D. Teaching Strategies for the Culturally Disadvantaged, Rand McNally and Company, Chicago, 1966.
- Taylor, R.G. Personality traits and discrepant achievement: a review. Journal of Counseling Psychology, 1964, 11:76-82.
- Thorndike, R.L. The Concepts of Over and Underachievement, Columbia University Press, New York, 1963.
- Thorpe, L.P., Clark, W.W. and Tiegs, E.W. California Test of Personality, 1953 Revision, California Test Bureau, Los Angeles, 1953.
- Turney, A.H. Factors other than intelligence that affect success in high school. University of Minnesota Press, Minneapolis, 1930.
- Uhlinger, C.A. and Stephens, M.W. Relation of achievement motivation to the academic achievement in students of superior ability. Journal of Educational Psychology, 1960, 51:259-66.
- Van Alstyne, D. Study of ten gifted children whose school progress was unsatisfactory, Journal of Educational Research, 1922, 8:12-34.
- Volberding, E. Characteristics of successful and unsuccessful eleven year old pupils, Elementary School Journal, 1949, 49:404-10.

- Wagman, M. Persistence in ability-achievement discrepancies and Kuder scores, Personnel and Guidance Journal, 1964, 43:383-9.
- Wahlstrom, M.W. A comparison of EPPS and TAT Need for Achievement Scores and Academic Success, unpublished M.Ed. Thesis, University of Alberta, 1965.
- Walsh, A.M. Self Concepts of Bright Boys with Learning Difficulties, Teachers College, New York, 1956.
- Wellington, C.B. and Wellington, J. The Underachiever: Challenge and Guidelines, Rand McNally and Company, Chicago, 1965.
- Winter, W.D. Values and achievement in a freshman psychology course, Journal of Educational Research, 1950, 54:183-6.
- Wiseman, S. Education and Environment, Manchester University Press, Manchester, 1964.
- Witham, A.P. In grades four through eight, in H.A. Robinson (Ed.) The Underachiever in Reading, University of Chicago Press, 1962.
- Young, J.B. How emotional traits predispose to college failure, Journal of Educational Psychology, 1927, 18:631-36.
- Zoolian, C.H. Factors related to differential achievement among boys in ninth grade algebra, Journal of Educational Research, 1965, 58:205-7.



APPENDICES

APPENDIX A

THE CANADIAN OCCUPATIONAL SCALE

APPENDIX

Table 1—Occupations Ranked and Grouped According to Combined Standard Scores for Income and Years of Schooling, by Sex, Canada, 1951^a

Occupation	Sex	Score ^b	Occupation	Sex	Score ^b
Class 1					
Judges	M	90.0	Accountants and auditors	M	61.8
Dentists	M	82.5	Authors, editors, and journalists	F	61.4
Physicians and surgeons	M	81.2	Clergymen	M	61.0
Lawyers	M	78.8	Designers, clothing	M	60.6
Engineers, chemical	M	77.8	Gov't. service officials	M	60.6
Actuaries	M	77.6	Transportation managers	M	60.1
Engineers, mining	M	77.4	Farmers	F	59.4
Engineers, electrical	M	75.2	Community service workers	F	59.1
Engineers, civil	M	75.0	Dispatchers, train	M	58.5
Architects	M	73.2	Designers, cloth	F	58.2
Class 2			Insurance agents	M	58.2
Statisticians	F	72.9	Foremen, communication	M	58.1
Engineers, mechanical	M	72.6	Advertising agents	M	58.0
Professors	M	72.0	Managers N.E.S. ^c	M	57.7
Stock and bond brokers	M	70.9	School teachers	F	57.6
Veterinarians	M	69.8	Artists and teachers of art	M	57.6
Business service officers	M	69.5	Nurses, graduate	F	57.4
Statisticians	M	68.8	Real estate agents and dealers	M	57.0
Mining managers	M	67.9	Social welfare workers	M	57.0
Finance managers	M	67.7	Retail trade managers	M	57.0
Osteopaths and chiropractors	M	67.3	Class 3		
Dietitians	F	67.0	Actors	F	56.9
Professors	F	66.7	Commercial travellers	M	56.7
Chemists and metallurgists	M	65.8	Advertising agents	F	56.6
Officers, armed forces	M	65.1	Forestry managers	M	56.5
Air pilots	M	65.0	Artists, commercial	F	56.4
Chemists and metallurgists	F	64.8	Radio announcers	M	56.4
Agricultural professionals	M	64.8	Laboratory technicians N.E.S. ^c	F	56.0
Electricity, gas, and water officials	M	64.7	Artists, commercial	M	56.0
Other professions	M	64.0	Draughtsmen	M	56.0
Construction managers	M	63.8	Brokers, agents, and appraisers	M	56.0
Wholesale trade managers	M	63.5	Inspectors, communication	M	55.0
Librarians	F	63.4	Artists and teachers of art	F	55.0
Authors, editors, and journalists	M	63.4	Surveyors	M	55.0
Manufacturing managers	M	63.0	Recreation service officers	M	54.8
Community service workers	M	62.4	Purchasing agents	M	54.8
Social welfare workers	F	62.2	Agents, ticket station	M	54.3
Osteopaths and chiropractors	F	62.2	Laboratory technicians N.E.S. ^c	M	54.2
School teachers	M	62.2	Stenographers and typists	F	54.1
Librarians	M	62.0	Conductors, railway	M	54.1
			Radio operators	M	54.0
			Locomotive engineers	M	54.0
			Photo-engravers	M	54.0

(continued)

Table 1—(Continued)

Occupation	Sex	Score ^b	Occupation	Sex	Score ^b
Class 3 (continued)			Music teachers	F	50.0
Music teachers	M	53.7	Firemen, fire department	M	49.8
Teachers N.E.S. ^c	F	53.6	Pressmen and plate printers	M	49.8
Office appliance operators	F	53.4	Telephone operators	F	49.6
Teachers N.E.S. ^c	M	53.4	Electricians	M	49.6
Retail trade managers	F	53.3	Machinists, metal	M	49.6
Telegraph operators	F	52.9	Linemen and servicemen	M	49.4
Foremen, mining	M	52.8	Engineering officers (on ships)	M	49.4
Window-decorators	F	52.3	Baggageirens	M	49.4
Nurses, graduate	M	52.2	Transportation inspectors	M	49.4
Actors	M	52.1	Rolling millmen	M	49.4
Stenographers	M	52.0	Auctioneers	M	49.3
Class 4			Inspectors and graders	M	49.2
Book-keepers and cashiers	F	51.9	Farmers	M	49.2
Forewomen, communication	F	51.8	Photographic occupations		
Foremen, manufacturing	M	51.8	N.E.S. ^c	M	49.2
Photographers	M	51.8	Collectors	M	49.1
Inspectars, construction	M	51.7	Dental mechanics	M	49.1
Window-decorators	M	51.6	Sulphite cookers	M	49.0
Telegraph operators	M	51.6	Wire drawers	M	48.9
Petroleum refiners	M	51.6	Other ranks, armed forces	M	48.8
Toolmakers	M	51.6	Electroplaters	M	48.8
Engravers, except			Plumbers	M	48.8
photo-engravers	M	51.4	Matormen	M	48.7
Undertakers	M	51.3	Quarriers	M	48.6
Office clerks	F	51.2	Machine operators, metal	M	48.5
Locomotive firemen	M	51.2	Paint makers	M	48.4
Book-keepers and cashiers	M	51.2	Filers	M	48.4
Brakemen, railway	M	51.1	Upholsterers	M	48.3
Power station operators	M	51.0	Knitters	M	48.3
Office appliance operators	M	51.0	Ward inspectors	M	48.3
Doctor, dentist attendants	F	50.8	Barbers	F	48.2
Motion picture projectionists	M	50.8	Milliners	F	48.2
Radio repairmen	M	50.8	Tobacco products workers	F	48.2
Captains, mates, pilots	M	50.7	Furnacemen	M	48.2
Foremen, transportation	M	50.7	Furriers	M	48.2
Foremen, commercial	M	50.6	Brothers	M	48.1
Personal service officers	M	50.5	Paper box makers	M	48.1
Class 5			Other bookbinding workers		
Patternmakers	M	50.4	N.E.S. ^c	F	48.0
Compositors	M	50.4	Coremakers	M	48.0
Inspectars, metal	M	50.4	Vulcanizers	M	48.0
Paper-makers	M	50.4	Liquor and beverage workers	M	48.0
Photographers	F	50.2	Postmen	M	48.0
Policemen	M	50.2	Meat canners	F	48.0
Office clerks	M	50.2	Other upholstering workers		
Mechanics, airplane	M	50.1	N.E.S. ^c	F	48.8
Inspectars, metal products	F	50.0	Backbinders	F	48.8
			Transportation, storage,		
			communication workers	F	48.8
			Polishers, metal	M	48.8

(continued)

Table 1---(Continued)

Occupation	Sex	Score ^b	Occupation	Sex	Score ^b
Class 5 (continued)					
Furriers	F	45.6	Sheetmetal workers	M	47.1
Structural iron workers	M	45.6	Shipping clerks	M	47.0
Mechanics, motor	M	45.6	Logging foremen	M	45.4
Textile inspectors	M	45.6	Labellers	M	45.3
Cabinet and furniture makers	M	45.5	Nurses, in training	F	45.2
Loom fixers	M	45.5	Meat canners	M	45.2
Weavers, textile	F	45.4	Farm managers	M	45.2
Butchers	M	45.4	Plasterers	M	45.2
Miners	M	45.4	Textile inspectors	M	45.1
Assemblers, electrical equipment	F	48.9	Other pulp and paper workers	F	45.1
Operators, electric street			Class 6		
railway	M	48.8	Winders and warpers	F	45.0
Stationary engineers	M	48.7	Carders and drawing frame		
Bookbinders	M	48.6	workers	F	45.0
Tire and tube builders	F	48.4	Sales clerks	F	45.0
Canvassers	M	48.2	Moulders, metal	M	45.0
Telephone operators	M	48.2	Nurses, practical	M	45.0
Switchmen and signalmen	M	48.2	Cutters, textile goods	F	44.9
Opticians	M	48.2	Elevator tenders	F	44.8
Jewellers and watchmakers	M	48.2	Tailoresses	F	44.8
Personal service workers	F	48.1	Textile inspectors	F	44.8
Assemblers, electrical			Potmen	M	44.8
equipment	M	48.1	Timbermen	M	44.7
Tire and tube builders	M	48.1	Prospectors	M	44.7
Millwrights	M	48.0	Oilers, power plant	M	44.7
Religious workers N.E.S. ^c	M	48.0	Liquor and beverage workers	F	44.6
Fitters, metal	F	47.9	Paper box makers	F	44.6
Milliners	M	47.8	Kiln burners	M	44.6
Construction foremen	M	47.7	Brick and stone masons	M	44.6
Opticians	F	47.6	Construction machine operators	M	44.5
Bus drivers	M	47.6	Canvassers	F	44.4
Heat treaters	M	47.6	Service station attendants	M	44.4
Religious workers N.E.S. ^c	F	47.5	Painters and decorators	M	44.4
Photographic workers N.E.S. ^c	F	47.4	Hot and cap makers	M	44.4
Machine operators, metal	F	47.4	Bleachers and dyers	M	44.4
Boilermakers	M	47.3	Spinners and twisters	F	44.3
Jewellers and watchmakers	F	47.2	Rubber shoe makers	F	44.2
Other bookbinding workers			Porters	M	44.2
N.E.S. ^c	M	47.2	Tabacco products workers	M	44.2
Sales clerks	M	47.2	Millers	M	44.2
Hoistmen, crane men	M	47.2	Nurses, practical	F	44.1
Welders	M	47.2	Finishers, textile	F	44.0
Mechanics N.E.S. ^c	M	47.2	Blacksmiths	M	44.0
Mechanics, railroad	M	47.2	Tailors	M	44.0
Fitters, metal	M	47.2	Bakers	M	43.8
Cutters, textile goods	M	47.2	Weavers	M	43.8
Millmen	M	47.2	Rubber shoe makers	M	43.8
Wire drawers	F	47.1	Labellers	F	43.7
Core makers	F	47.1	Other personal service workers	F	43.6
Riggers	M	47.1	Barbers	M	43.6

(continued)

Table 1—(Continued)

Occupation	Sex	Score ^b	Occupation	Sex	Score ^b
Class 6 (continued)			Carders and drawing frame tenders		
Truck drivers	M	43.6		M	42.3
Packers and wroppers	M	43.6	Box and basket makers	F	42.2
Finishers, wood	M	43.6	Coopers	M	42.2
Finishers, textile	M	43.6	Soilors	M	42.1
Tanners	M	43.6	Horness and saddle makers	M	42.0
Hat and cap makers	F	43.5	Nuns	F	41.8
Cutters, leather	M	43.5			
Commercial packers and wroppers	F	43.4	Class 7		
Teamsters	M	43.4	Coaks	M	41.8
Stone cutters	M	43.4	Janitors	M	41.6
Riveters and rivet heaters	M	43.4	Loundresses, cleaners, and dyers	F	41.4
Butter and cheese makers	M	43.3	Sectionmen and trackmen	M	41.4
Chauffeurs	M	43.3	Chorworkers and cleaners	M	41.3
Boiler firamen	M	43.3	Paper box, bag, and envelope makers	M	41.3
Spinners	M	43.3	Sawyers	M	41.2
Inspectors N.E.S., graders ^c	F	43.2	Longshoremen	M	41.2
Pastmen	F	43.2	Waitresses	F	41.2
Waiters	M	43.2	Glove makers	F	41.2
Corpenlers	M	43.2	Labourers	M	40.8
Sewers and sewing machine operators	M	43.2	Caoks	F	40.5
Forest rangers	M	43.2	Messengers	M	40.2
Lack keepers, canalmen	M	43.1	Shoemakers	M	40.2
Wood turners	M	43.1	Ushers	M	40.1
Labourers, mines and quarries	M	43.1	Jonitors	F	40.0
Sewers and sewing machine operators	F	43.0	Howkers	M	39.3
Brick and stone masons	M	43.0	Housekeepers and matrans	F	38.9
Textile inspectors	F	42.8	Hotel cafe and household workers	M	38.8
Machine operators, boot and shoe	F	42.8	Newsboys	M	38.7
Knitters	F	42.8	Guides	M	37.8
Guards	M	42.8	Hotel cafe and household workers	F	37.8
Winders, warpers, reelers	M	42.8	Farm labourers	M	37.5
Glove makers	M	42.7	Lumbermen	M	37.4
Cutters, leather	F	42.6	Chorworkers and cleaners	F	37.4
Elevator tenders	M	42.5	Fishermen	M	36.9
Bokers	F	42.4	Bootblacks	M	36.8
Machine operators, boat and shoe	M	42.4	Fish canners, curers and packers	M	36.2
Launderers	M	42.4	Fish canners, curers and packers	F	36.0
Firemen, on ships	M	42.4	Hunters and trappers	M	32.0
Cement and concrete finishers	M	42.4			
Dressmakers and seamstresses	F	42.3			

a. Canada, Dominion of Statistics, *Census of Canada, 1951*, V, Table 21, and IV, Table 11 (Ottawa, 1953); Canada, Dept. of Internal Revenue, *Taxation Statistics, 1951* (Ottawa, 1953). Additional information supplied by D.B.S., Census Analysis Section.

b. The mean of the scores = 50; the standard deviation = 10 (calculated separately for each sex).

c. N.E.S. = not elsewhere specified.

APPENDIX B

STUDY HABITS AND ATTITUDES INVENTORY

STUDY HABITS AND ATTITUDES INVENTORY

This inventory is trying to find out what your study habits are *really* like. Read each of the following statements and decide whether it is true or false for *you*. On the separate answer sheet there is a T and an F beside the number for each statement. If you decide a statement is true for you, cross out the T beside the number for that statement, (e.g. b. ~~T~~ F); if it is false for you, cross out the F. Because this is not a test, there are no right or wrong answers; just what is true for you.

Do not mark the answers on this paper.

1. I prefer to study with a friend rather than by myself.
2. I miss many classes because of illness.
3. I like most of my teachers.
4. Most of the subjects I am taking are interesting.
5. I become nervous and tense when studying for an exam.
6. I feel students should spend as much time as possible on homework or studying.
7. Other people distract me when I am trying to study.
8. I like to participate in class discussions.
9. Even if I tried harder, I wouldn't get marks that are much better.
10. I find it more difficult to write down my thoughts than just to say them.
11. I usually succeed in the things I do.
12. I like to finish an exam as quickly as possible and hand it in.
13. I am often too tired or sleepy to study efficiently.
14. If an exam is given unexpectedly, I get a much lower mark than if I'd studied for it.

15. I stay up late the night before a major exam, studying.
16. If I knew no one would ever find out, I would probably cheat to get a better mark.
17. The rules and regulations of this school are too strict.
18. Some subjects seem to be a complete waste of time.
19. Unless I am in the right mood, I can't study.
20. Some teachers have a grudge against me.
21. I would like to be a teacher.
22. I often go to class without having completed my homework.
23. You can get a good job and make enough money without having to go to university.
24. I feel that parents should pressure their children to get as much education as possible.
25. If I don't agree with a teacher, I don't hesitate to tell him so.
26. Teachers give most of their attention to the good students.
27. I like to study.
28. I prefer multiple choice tests to those involving essays.
29. I belong to the public library.
30. I check over my answers before I hand in a test paper.
31. I follow a definite study schedule which I have previously planned.
32. I like to have the radio or T.V. on when I am studying.
33. I prefer to sit at the front of the classroom.
34. I try to get all my homework done in school so that I have none to take home.

35. I feel that having fun while you're young is more important than doing well in school.
36. Usually the people who get the good marks aren't any fun to have as friends because they are always studying.
37. Even if I know of a test several days ahead of time, I usually leave studying to the last minute.
38. I read several books a month.
39. We have a set of encyclopedia in our house.
40. I have a hard time finding a book to read that is really interesting.
41. Even if I don't have a definite assignment, I still spend homework time studying or organizing my notebook.
42. Some of my classes are so boring that I daydream, draw pictures, etc. rather than pay attention to the teacher.
43. I prefer doing my homework at a desk or table rather than in a comfortable chair or on the bed.
44. I sometimes get into trouble because I talk or "fool around" in class.
45. I feel that teachers give their favorites higher marks than they deserve.
46. When I miss school because of some unavoidable circumstance, I make up the work I missed without being told to do so by my teacher.
47. I sometimes buy books with my own money.
48. When answering an essay question, I make an outline of important points before I start writing.
49. I only do that homework which is required for the next day.
50. I like to eat while I am doing my homework.
51. Even if I do not understand what the teacher is saying I seldom ask for an explanation.

- 52. I like the teachers to give back tests and assignments in order of marks.
- 53. I give special attention to neatness when preparing work to be handed in.
- 54. I do not have a quiet, suitable place in which to study at home.
- 55. I keep my notes neat and complete for each subject.
- 56. Whether I like a subject or not, I still work hard to make a good grade.
- 57. I dislike school.
- 58. When studying for an exam, I make study notes or underline while I am reading.
- 59. Teachers really don't understand teenagers.
- 60. I practically never read nonfiction unless I have to.

APPENDIX C

STUDY HABITS AND ATTITUDES INVENTORY

ITEM ANALYSIS

STUDY HABITS AND ATTITUDES INVENTORY

ITEM ANALYSIS

Item	Underachievers N=53	Achievers N=53	Z-score	Level of Significance
1	25*	12*	2.649	.01
2	13	5	2.070	.05
3	28	42	-2.871	.01
4	19	36	-3.305	.01
5	28	22	1.167	---
6	22	15	1.426	---
7	30	25	0.972	---
8	38	37	0.214	---
9	11	5	1.628	---
10	36	30	1.202	---
11	28	42	-2.871	.01
12	26	5	4.484	.01
13	20	9	2.397	.05
14	30	29	0.196	---
15	13	13	0.000	---

* This number indicates the number of boys in each of the groups who responded 'true' to each item.

STUDY HABITS AND ATTITUDES INVENTORY

ITEM ANALYSIS
(continued)

Item	Underachievers	Achievers	Z-score	Level of Significance
16	16	6	2.395	.05
17	30	15	2.948	.01
18	41	30	2.272	.05
19	42	30	2.497	.05
20	26	7	3.986	.01
21	6	9	-0.836	---
22	37	11	5.073	.01
23	27	17	1.971	.05
24	31	34	-0.598	---
25	25	30	-0.972	---
26	22	9	2.776	.01
27	10	16	-1.354	---
28	41	42	-0.236	---
29	30	37	-1.410	---
30	31	42	-2.307	.05

STUDY HABITS AND ATTITUDES INVENTORY

ITEM ANALYSIS
(continued)

Item	Underachievers	Achievers	Z-score	Level of Significance
31	7	13	-1.489	---
32	23	15	1.620	---
33	13	22	-1.859	---
34	44	40	0.958	---
35	13	6	1.773	---
36	21	6	3.344	.01
37	33	20	2.525	.05
38	20	26	-1.176	---
39	32	41	-1.888	---
40	42	25	3.424	.01
41	11	15	-0.903	---
42	41	23	3.574	.01
43	34	45	-2.452	.05
44	43	29	2.913	.01
45	27	3	5.175	.01

STUDY HABITS AND ATTITUDES INVENTORY

ITEM ANALYSIS
(continued)

Item	Underachievers	Achievers	Z-score	Level of Significance
46	22	37	-2.933	.01
47	34	36	-0.410	---
48	19	20	-0.201	---
49	36	32	0.810	---
50	29	14	2.967	.01
51	32	13	3.734	.01
52	27	25	0.389	---
53	26	35	-1.769	---
54	20	6	3.160	.01
55	17	33	-3.113	.01
56	31	42	-2.307	.05
57	28	11	3.424	.01
58	16	24	-1.603	---
59	40	15	4.860	.01
60	24	18	1.191	---

B29891